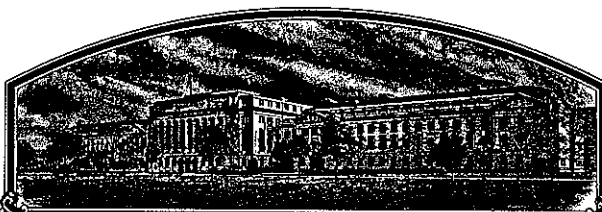


No.

8700035



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

## Coker's Pedigreed Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE  
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S), AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (T. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'Coker 686'



In Testimony Whereof, I have hereunto set  
my hand and caused the seal of the Plant  
Variety Protection Office to be affixed  
at the City of Washington, D. C.  
this 29th day of May in  
the year of our Lord one thousand nine  
hundred and eighty-seven.

Attest:

*Kenneth H. Evans*  
Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*Richard E. Lyng*  
Secretary of Agriculture

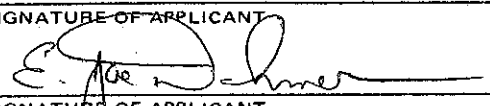
U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

FORM APPROVED: OMB NO. 0681-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

## APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

1. NAME OF APPLICANT(S) Coker's Pedigreed Seed Company		2. TEMPORARY DESIGNATION	3. VARIETY NAME Coker 686
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) P.O. Box 340 Hartsville, S.C. 29550		5. PHONE (Include area code) 803-332-7531	FOR OFFICIAL USE ONLY VPPO NUMBER 8700035
6. GENUS AND SPECIES NAME Glycine max	7. FAMILY NAME (Botanical) Leguminosae		FILING DATE December 24, 1986 TIME 8:30 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.
8. KIND NAME Soybean	9. DATE OF DETERMINATION March 1984		AMOUNT FOR FILING \$ 1800.00 DATE December 22, 1986
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation		FEES RECEIVED AMOUNT FOR CERTIFICATE \$ 200.00 DATE April 27, 1987	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION South Carolina		12. DATE OF INCORPORATION June 12, 1918	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS J.J. Stanton P.O. Box 340 Hartsville, S.C. 29550 PHONE (Include area code): 803-332-7531			
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.) b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement. c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of Variety (Request form from Plant Variety Protection Office.) d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of Variety. e. <input checked="" type="checkbox"/> Exhibit E, Statement of the Basis of Applicant's Ownership.			
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.) <input type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input checked="" type="checkbox"/> No			
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> Yes <input type="checkbox"/> No		17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> Foundation <input type="checkbox"/> Registered <input type="checkbox"/> Certified	
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? <input type="checkbox"/> Yes (If "Yes," give date) <input checked="" type="checkbox"/> No			
19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES? United States, 1986 <input checked="" type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input type="checkbox"/> No			
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF APPLICANT 		DATE December 19, 1986	
SIGNATURE OF APPLICANT		DATE 1	

14a. EXHIBIT A, Origin and Breeding History  
Coker 686 Soybeans

<u>YEAR</u>	<u>Gen.</u>	<u>Activity</u>
1976		Cross: Coker 76-849 x F71-1180 F71-1180 later named "Braxton".
1977	F <sub>1</sub>	Grown in field.
1977-78	F <sub>2</sub> , F <sub>3</sub>	Generation advanced in winter greenhouse.
1978	F <sub>4</sub>	Field F <sub>4</sub> 1000-1001; Plants selected.
1979	F <sub>5</sub>	Plant row 1116.
1980	F <sub>6</sub>	Replicated yield trial; Assigned Breeding Number Coker 80-846.
1981	F <sub>7</sub>	Replicated yield trials, 3 locations.
1982	F <sub>8</sub>	Further company, public agency testing.
1983	F <sub>9</sub>	Further testing. Breeder seed produced.
1984	F <sub>10</sub>	Named Coker 686. Foundation seed produced.
1985	F <sub>11</sub>	Certified seed produced.
1986	F <sub>12</sub>	Certified seed sold.

Variants: May have a white-flowered off-type with a black hilum  
at a frequency of 1/8000.

Evidence of Stability: After observing plants and seed for four  
generations since the line was isolated,  
plant and seed characters have been uniform.

## 14b. EXHIBIT B, NOVELTY STATEMENT

## COKER 686 SOYBEANS

Field appearance of Coker 686 is most similar to Coker 156 in terms of plant height, maturity, and erect habit. Mature plant type differs from Coker 156 in that Coker 686 has tawny pubescence whereas Coker <sup>156</sup>~~686~~ has gray pubescence. In the seedling stage, Coker 686 is tolerant to the herbicide metribuzin, whereas Coker 156 is sensitive.

Coker 686 is most similar to Centennial in most qualitative characters, but not plant type or field appearance. Listed below are similarities and differences among the three varieties.

<u>Character</u>	<u>Coker 686</u>	<u>Centennial</u>	<u>Coker 156</u>
Pubescence	Tawny	Tawny	Gray
Flower Color	Purple	Purple	White
Seed Coat Luster	Shiny	Shiny	Dull
SCN Race 1,3	Resistant	Resistant	Tolerant
Hilum Color	Black	Black	Buff
Peanut Root Knot	Resistant	Susceptible	Susceptible
Southern Root Knot	Resistant	Resistant	M. Resistant
<sup>Grams</sup> Grains/100 seed, $\bar{x}$ 3000 sd.	14.96	14.39	13.74

CORRECTIONS APPROVED BY RJS. 4/27/87

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
LIVESTOCK, MEAT, GRAIN & SEED DIVISION  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MARYLAND 20705

EXHIBIT C  
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY  
SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Coker's Pedigreed Seed Company	TEMPORARY DESIGNATION	VARIETY NAME Coker 686
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 900 Darlington Hwy. P.O. Box 1340 Hartsville, S.C. 29550		FOR OFFICIAL USE ONLY PVPO NUMBER 8700035

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,  ).

## 1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)  
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)

2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)  
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

## 2. SEED COAT COLOR: (Mature Seed)

1 = Yellow

2 = Green

3 = Brown

4 = Black

5 = Other (Specify) \_\_\_\_\_

## 3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Corsoy 79'; 'Braxton')

2 = Shiny ('Nebsoy'; 'Gasoy 17')

## 4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

## 5. HILUM COLOR: (Mature Seed)

1 = Buff

2 = Yellow

3 = Brown

4 = Gray

5 = Imperfect Black

6 = Black

7 = Other (Specify) \_\_\_\_\_

## 6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow

2 = Green

## 7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low

2 = High

## 8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1<sup>a</sup>)2 = Type B (SP1<sup>b</sup>)

## 9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis')

2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')

3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')

4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

## 10. LEAFLET SHAPE:

1 = Lanceolate

2 = Oval

3 = Ovate

4 = Other (Specify) \_\_\_\_\_

## 11. LEAFLET SIZE:

☐ 2 1 = Small ('Amsoy 71'; 'A5312')  
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

## 12. LEAF COLOR:

☐ 3 1 = Light Green ('Weber'; 'York')  
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

## 13. FLOWER COLOR:

☐ 2 1 = White 2 = Purple 3 = White with purple throat

## 14. POD COLOR:

☐ 1 1 = Tan 2 = Brown 3 = Black

## 15. PLANT PUBESCENCE COLOR:

☐ 2 1 = Gray 2 = Brown (Tawny)

## 16. PLANT TYPES:

☐ 3 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton')  
3 = Bushy ('Gnome'; 'Govan')

## 17. PLANT HABIT:

☐ 1 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will')  
3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

## 18. MATURITY GROUP:

☐ 0 9 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V  
9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

## 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

## BACTERIAL DISEASES:

☐ 2 Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

☐ 0 Bacterial Blight (*Pseudomonas glycinea*)

☐ 2 Wildfire (*Pseudomonas tabaci*)

## FUNGAL DISEASES:

☐ 0 Brown Spot (*Septoria glycines*)

Frogeye Leaf Spot (*Cercospora sojina*)

☐ 0 Race 1 ☐ 0 Race 2 ☐ 0 Race 3 ☐ 0 Race 4 ☐ 0 Race 5 ☐ 0 Other (Specify)

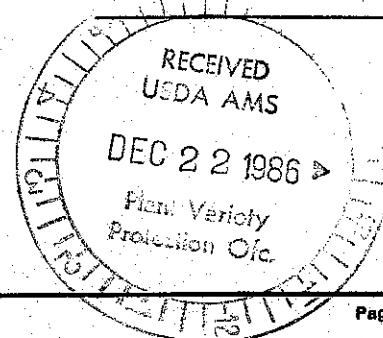
☐ 0 Target Spot (*Corynespora cassicola*)

☐ 0 Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)

☐ 2 Powdery Mildew (*Microsphaera diffusa*)

☐ 0 Brown Stem Rot (*Cephalosporium gregatum*)

☐ 2 Stem Canker (*Diaporthe phaseolorum* var. *caulivora*) : See Exhibit D



## 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

## FUNGAL DISEASES: (Continued)

Pod and Stem Blight (*Diaporthe phaseolorum* var. *sojae*)  
 Purple Seed Stain (*Cercospora kikuchii*)  
 Rhizoctonia Root Rot (*Rhizoctonia solani*)  
 Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)  
 Race 1    Race 2    Race 3    Race 4    Race 5    Race 6    Race 7  
 Race 8    Race 9    Other (Specify) \_\_\_\_\_

## VIRAL DISEASES:

Bud Blight (Tobacco Ringspot Virus)  
 Yellow Mosaic (Bean Yellow Mosaic Virus)  
 Cowpea Mosaic (Cowpea Chlorotic Virus)  
 Pod Mottle (Bean Pod Mottle Virus)  
 Seed Mottle (Soybean Mosaic Virus)

## NEMATODE DISEASES:

Soybean Cyst Nematode (*Heterodera glycines*)  
 Race 1    Race 2    Race 3    Race 4    Other (Specify) \_\_\_\_\_  
 Lance Nematode (*Hoplolaimus Colombus*) : See Exhibit D  
 Southern Root Knot Nematode (*Meloidogyne incognita*)  
 Northern Root Knot Nematode (*Meloidogyne Hapla*)  
 Peanut Root Knot Nematode (*Meloidogyne arenaria*) : See exhibit D  
 Reniform Nematode (*Rotylenchulus reniformis*)  
 OTHER DISEASE NOT ON FORM (Specify): \_\_\_\_\_

## 20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

Iron Chlorosis on Calcareous Soil  
 Other (Specify) \_\_\_\_\_

## 21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

Mexican Bean Beetle (*Epilachna varivestis*)  
 Potato Leaf Hopper (*Empoasca fabae*)  
 Other (Specify) \_\_\_\_\_

## 22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

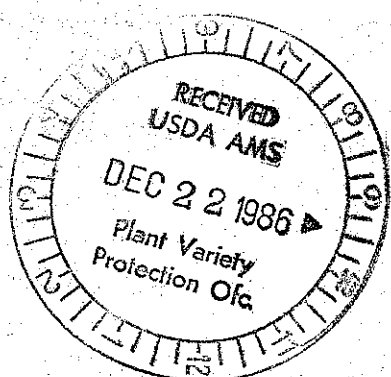
CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	Coker 156	Seed Coat Luster	Centennial
Leaf Shape	Braxton	Seed Size	Coker 156
Leaf Color	Braxton	Seed Shape	Coker 156
Leaf Size	Braxton	Seedling Pigmentation	

**23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data**

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/POD
				CM Width	CM Length	% Protein	% Oil		
Submitted	146	1.5	91					14	
Coker 156 Name of Similar Variety	146	1.6	89					13	

**PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:**

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A<sub>2</sub> in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.





## 14d. EXHIBIT D, Additional Description of Variety

## COKER 686 SOYBEANS

Coker 686 exhibits a moderate level of resistance to peanut root knot, M. arenaria. On a scale of 1 to 5, Coker 686 reads 2.3-2.7, whereas Centennial reads 4.0 or higher. Coker 686 also shows a moderate level of resistance to Lance nematode, Hoplolaimus columbus, whereas Centennial is more highly resistant.

The difficulty in comparing Coker 686 with other varieties is that it is similar to Coker 156 in height, maturity, and erect habit, but the leaves of Coker 686 are more narrow and pointed, and the foliage color is darker green than Coker 156.

8700035

14e. EXHIBIT E, Statement of the Basis of Applicant's  
Ownership

COKER 686 SOYBEANS

Coker's Pedigreed Seed Company is the sole, original and first breeder of the 'Coker 686' variety of soybeans for which it solicits a Certificate of Protection.